

## Lecture 13 Outline

**Reading:** Dawson, §1–2

**Assignments due:** Final term paper due March 3 in class  
Lab #6 (“Web Pages with Style”) due Feb. 22 at 11:55PM

---

1. Greetings and felicitations!
2. Security: how they attack your system
  - a. Casing the system: port scan, guessing passwords, sniffing information
  - b. Identifying targets: servers on ports
  - c. First step: get on the system
  - d. Next step: escalate privileges
3. The nasty stuff
  - a. Spyware
  - b. Adware
  - c. Computer malware
4. How antivirus software works
  - a. Signature scanners
  - b. Heuristic detectors look for code triggered by events, or disk writes bypassing the OS
  - c. Memory resident monitor for virus actions.
5. Spam
  - a. What is it
  - b. How they find you ... or do they?
6. How antispam software works
  - a. Blacklists, whitelists
  - b. Content filtering
  - c. Bayesian filter of content for spam characteristics
7. How firewalls work
  - a. Block ports
  - b. Packet filtering based on source and destination, and packet patterns.
  - c. Content filtering
8. Cryptography
  - a. Classical ciphers: sharing a key
  - b. Public key ciphers: a public and private key
  - c. Digital signatures
9. Introduction to the Python programming language
  - a. Running the interpreter
  - b. Program that prints "hello world"
  - c. Example of syntax errors
  - d. Comments and spaces
10. Quotes and strings
  - a. Basics
  - b. Escaping characters
  - c. Handling long lines
  - d. Printing several lines at once
  - e. Suppressing trailing newline
  - f. Concatenating strings
11. Numbers
  - a. Integer arithmetic
  - b. Floating point arithmetic
  - c. Conversions